

REMARKS

Claims 1-35 are currently pending in this application. Claims 36-62 are cancelled.

Claims 1-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tsai et al. (U.S. Pat. No. 6,509,636) in view of Beyne et al. (U.S. Patent No. 5,604,376) ("Hamburger"). Applicants respectfully traverse the rejection.

Claim 1 recites, *inter alia*, "a die . . . and a transparent element adhesively attached to said die by an adhesive material an having a first surface facing a first surface of said die, at least one of said first surfaces having at least one adhesive flow restriction area for impeding flow of an adhesive across said first surface of said die."

Tsai fails to teach or suggest "a transparent element adhesively attached to said die" as recited in claim 1. Tsai instead interposes an annular encapsulant 22 between a lid 23 and chip carrier 20.

Additionally, neither Tsai nor Beyne, individually or in combination, teaches or suggests "a die . . . and a transparent element adhesively attached to said die by an adhesive material an having a first surface facing a first surface of said die, at least one of said first surfaces having at least one adhesive flow restriction area for impeding flow of an adhesive across said first surface of said die" as recited in claim 1.

The Office Action states at page 2, "Beyne shows a similar device structure, for example, as seen in Fig. 10F, where the transparent cover is attached directly to the chip (102), and which also incorporates a restriction area or encapsulant barrier at the ends of the chip." Although Tsai and Beyne are similar in that both are directed to attaching a transparent cover to a semiconductor package, the methods and configurations used by Tsai and Beyne in attaching a cover to a semiconductor package

are so different as to be incompatible with each other. The approach of Tsai is to first form an annular encapsulant 22 on a chip carrier 20 by molding, leaving a chip attach region 202 exposed, and adhesively mounting a lid 23 to the encapsulant 22. Tsai, Col. 3, lines 11-24. Tsai is primarily concerned with uniformity of adhesion around the encapsulant and lid (Col. 3, lines 48-52), but inasmuch as Tsai is concerned with leakage of adhesive, Tsai's primary concern is that leakage may "seriously damage[] the appearance of the semiconductor package" (Col. 3, lines 56-57); to the extent that Tsai acknowledges the problem of adhesive causing more than cosmetic damage, Tsai submits that "the molten adhesive 14 still possibly leaks to the inner side wall of the encapsulant 12, and even contaminates the chip attach region 102" (Col. 1, lines 60-62). Tsai seems unconcerned with contamination of the chip itself, since even in Tsai's admitted prior art example (Fig. 1), the chip 15 is safely mounted above the chip attach region 102.

Beyne is directed to an entirely different aspect of semiconductor packaging. Beyne does not contain a restriction area. The Office Action does not identify the element or elements of Beyne that allegedly comprise the restriction area, but it appears that the Office Action is referring, in Figure 10F for example, to the walls (not numbered) having a trapezoidal cross-section between elements 101 and 102. While these walls arguably impede the flow of adhesive, they are not an analogous structure to the elements, in Tsai, also identified as a flow restriction area by the Office Action. The walls of Beyne are more closely related to the annular encapsulant of Tsai. Indeed, the Office Action refers to glob top encapsulation 105 as adhesive with respect to Beyne, but the encapsulant of Beyne is primarily designed to encapsulate wires 104, not to secure or support the seal. The package of Figure 10, specifically relied on by the Office Action, is not even hermetically sealed (Col. 5, lines 15-20), thus rendering one of the main advantages of Tsai irrelevant. Additionally, assuming that the encapsulation 105

of Beyne were an acceptable substitute for the adhesive of Tsai, Tsai teaches away from such a combination. Tsai specifically identifies the placement of adhesive 121 on the outer walls of encapsulant 12 as undesirable (Fig. 1, Col. 1, lines 54-57).

The rejection relies on improper hindsight in combining the references. Using Applicants' claimed subject matter as a roadmap, the Office Action improperly combines disparate elements of Tsai and Beyne in an attempt to arrive at Applicants' claimed invention.

This is most evident in the Office Action's use of Applicants' own language to characterize different elements of Tsai and Beyne, even where the elements are not related and not properly combinable. For example, the Office Action refers on page 2 to a "restriction area" of Tsai as being a trench or protuberance on element 22; Tsai calls element 22 an encapsulant. However, the Office Action (also on page 2) then refers a supposedly analogous "restriction area" of Beyne as being the distinct element between the seal 101 and the chip 102, which Beyne calls a wall. The analytical gymnastics required of a person having ordinary skill in the art to arrive at the Office Action's interpretation of the art, assuming he even considers the structures analogous, is only possible by using the language and teachings of the Applicants' claims. Without Applicants' claim 1 as a guide, there is no motivation to combine these references in a way that would arrive at Applicants' claimed subject matter.

For the reasons stated above, Applicants respectfully request withdrawal of the above rejection and allowance of independent claim 1. Claims 2-35 are dependent on claim 1, and thus are allowable for similar reasons.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: December 17, 2004

Respectfully submitted,

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